

National Weather Service - Elko The Great Basin Spotter Newsletter



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The NWS Cooperative Observer Program by Gerry Claycomb, General Meteorologist

The National Weather Service's Cooperative Observers are an invaluable resource. Data from the nearly 11,000 Cooperative Weather Stations across the U.S. are used in a myriad of applications. They are the backbone of our nation's climatological history. Each year, over 25,000 customer service climate requests are made from the public to the National Climatic Data Center, and many times more are made to the Regional Climate Centers. Coop data research is used extensively in a multitude of disciplines, including Energy, Architectural Design and Construction, Agriculture, Land Management, Water Resource Management, Transportation, Litigation, Recreation and Tourism, Manufacturing, and Scientific Research, to name a few.

It is estimated that the cooperative observers donate their time to the tune of over a million hours a year making the National Weather Service Cooperative Observer Program one of the nation's most cost-effective government sponsored programs.

The value of weather data collected, extending back over a hundred years, is becoming more and more valuable with the passage of time. The climatological data base generated through the efforts of the volunteer Cooperative Weather Observers provides not only the cornerstone of our nation's weather history, but also serves as the primary data for research into global climatic change.

Words To NWS Cooperative Observers from the Meteorologist-In-Charge by Kevin Baker

For our cooperative observers, in the unlikely event that you are ever subpoenaed to testify in a court case concerning your observations, please notify the Forecast Office. Ask for Jim Moore (Data Acquisition Program Manager) or me. We will notify our Regional Office and the NOAA attorneys office to provide assistance with the subpoena request.

Anyone who is working for the National Weather Service (including observers) is typically sheltered from subpoena requests regarding weather, as these types of requests are usually handled by private enterprise forensic meteorologists. The NOAA/NWS attorney will often intervene, and contact the attorney that initiates the subpoena.

When contacting the Forecast Office regarding a subpoena for weather data, we will ask you for the name of the subpoena attorney or judge.

We appreciate the time and effort you put forward in taking weather observations for the NWS. Your observations help maintain a large climate database at the National Climatic Data Center in Asheville, NC. This database is used by many interests ranging from building contractors to climatologists.



20 Years as a Coop Observer by Gerald Claycomb, General Meteorologist, and Troy Marshall, Hydrometeorological Technician

Nathan Yost began taking daily temperature and precipitation readings at Lamoille, Nevada on June 7, 1983. However, this was not the first time Nathan had assisted the National Weather Service. Before moving to Lamoille, Nathan lived in Ohwyhee and had been a Cooperative Observer there since the late 1960s.

In 1983, Nathan took over observing duties from Mrs. Bertie Miller who lived at the Lee Miller Ranch. The station was located here from October 18, 1975 to June 7, 1983 when Nathan took over the station.

Nathan has made cooperative observing a family affair with his wife and daughter recording daily highs and lows, along with precipitation measurements, when his job took him out of town for extended periods. In addition to maximum and minimum temperature recordings and daily rain and snowfall measurements, Nathan and family graciously took on the task of operating one of NWS Elko's 16 Fischer Porter Rain Gauges. This data is used by climatologists in Asheville, North Carolina in forecasting annual drought and long term climatological forecasts.

Nathan's most memorable weather experience in Lamoille was when he observed hailstones as large as one inch in diameter falling at his residence. When the storm finally ended, there was over four inches of hailstones in his backyard. It ruined his garden, but not his love for the weather. He has retired from his job recently and has stated that he would not sell his house unless the new owner agreed to carry on with the weather station duties. We hope you don't leave Nathan, for you have served the National Weather Service and the United States very well these past 20 years!



Hydrometeorological Technician Troy Marshall (left) and General Meteorologist Gerry Claycomb (right) present Nathan Yost (middle) with his 20 Year Awards for being a Coop Observer at Lamoille.

Tonopah Residents Undergo Spotter Training by Paul Eyssautier, Warning Coordination Meteorologist

Warning Coordination Meteorologist Paul Eyssautier and Senior Meteorologist Jim Harmer traveled to Tonopah on March 24th to present a Weather Safety and Severe Weather Spotter Training Workshop. Six people participated in this workshop, including William B. Hall, the Director of Emergency Services for Nye County. Bill was also responsible for



Warning Coordination Meteorologist Paul Eyssautier shows a slide of very large hail produced by a severe thunderstorm.

making arrangements for this workshop. The National Weather Service Forecast Office in Elko extends its appreciation for the work that Bill has done in helping present this workshop.

The National Weather Service forecasters provided safety information on thunderstorms and their associated hazards, such as lightning and flash flooding. There was a discussion on thunderstorm structure and the identifying characteristics of severe weather. Every participant received the Spotters Training Guide, pamphlets on thunderstorms and flash flooding and a cloud chart. Those that signed up as volunteers for the Severe Weather Spotter Program also received a free rain gauge.

Paul and Jim also talked about the new forecast products that the National Weather Service is providing. Gridded forecasts and tabular information that can be customized to the users needs are now available. National Weather Service web sites offer a vast array of digital and graphical information that is just a mouse click away. For an example, click on www.wrh.noaa.gov/elko.

CPR/1st Aid Training for Staff by Suzan Packham, Administrative Support Assistant

Over the past few months, several CPR/1st Aid classes were held at the Elko Forecast Office. This training takes place each year, giving staff members the knowledge and skills of correct emergency procedures to follow should an emergency arise. Some NWS staff members, especially the Electronic Technicians and the HydroMeteorological Technicians, conduct work outside the office in remote areas of our County Warning Area where emergency personnel could be hundreds of miles away.

The office training started in the Spring of 2001, with Paul Eyssautier, the Warning Coordinating Meteorologist, planning the classes and instructing the staff. This year he handed the reins to Sue Packham, the Administrative Support Assistant, to carry on this training. Paul and Sue both are certified instructors for the American Red Cross.



Senior Meteorologist Brian Fehr takes his CPR skills test while Administrative Assistant and American Red Cross Instructor Sue Packham shouts out different emergency scenarios.

Nevada Fires: Looking Back and Looking Ahead by Brian Fehr, Senior Meteorologist

With summer approaching, it is time to change our focus from snow and ice to rain and lightning, which is the main source for fires across the Great Basin. Last year across Northern and Central Nevada, there were 8 fires that were larger than 300 acres each that burned a total of just over 7,500 acres. Five of these fires were in Elko County with one of them man-made. This fire broke out on the 17th of July and caused a temporary closing of Mountain City highway north of Elko. This fire was contained the following day, though over 1,700 acres were burned.



With the potential for wildfires across the Great Basin, it is important, especially in rural areas, to protect your home and property to minimize the potential for a wildfire to destroy your home. There are some basic tips to minimize any wildfire threat to your home.

1. **Create a fire break around your home.** Landscape your property so plants and trees that are very susceptible to fire are not within 30 – 100 feet of your home. This doesn't mean that you have to have a barren yard, but a large tree overhanging your house does create a potential hazard.
2. **Keep your gutters clean.** Dead pine needles and leaves burn very easily.
3. **Stack wood away from your house or other buildings.** The convenience of having firewood near/on the porch does not offset the potential disaster if it was to catch on fire. Keep firewood stacked away from anything that will burn, especially buildings and fences.
4. **Install smoke detectors.** This is sound advice for any type of fire. Early warning on fires can not only save property, but more importantly, save you and your family. More fire deaths are the result of smoke inhalation than anything else.
5. **Have ample escapes in case of fire.** Not only should there be multiple ways to get out of your home, but off you property as well. There should be at least 2 exits on the ground floor and a way to get out of every room in the house in an emergency.
6. **Be careful what you make your roof with.** Some roofing material is much more flammable than others. Untreated wood shake roofs are very vulnerable to fire. When building a house or when you reshingle, make sure you use materials that are noncombustible.

We live in a beautiful country. By taking steps to preserve it, we can enjoy it for a long time.

Struck By Lightning Safety by Brandon Peloquin, Meteorologist Intern

Frank was on the 17th hole. From a distance, he saw billowing storm clouds, the occasional strike of lightning and heard rumbles of thunder. Although he knew that scattered thunderstorms were in the forecast for that hot central Nevada summer afternoon, he thought that he would play a quick round of golf and hopefully dodge any thunderstorms. Despite what he saw on the 17th hole, he continued to play his golf game. On the 18th hole, Frank drove to the green in just two shots, giving him the opportunity to make a birdie to finish the day. However, while he was on hole number 18, the cumulonimbus clouds moved perilously closer, the lightning strikes became more frequent and the thunder seemed to roar more loudly. Frank putted his white golf ball right into the hole, making his birdie and bringing a big smile to his face. But shortly after, as he was placing the flag back in the hole and getting ready to make a mad dash for the clubhouse, that is when it happened. Frank heard a sudden thunderous bang, then he stumbled to the ground as smoke poured out of his body. Frank was struck by lightning.



According to the National Weather Service, there are an estimated 25 million cloud to ground lightning strikes each year. Although lightning is very dangerous, many people fail to understand and recognize the dangers associated with lightning. When a thunderstorm is near, each and every cloud to ground lightning strike is a potential killer. Lightning can strike a person as far as 10 miles away from the area of rain in a thunderstorm, which is about the distance a human being can hear thunder. Plus, in Nevada, sometimes thunderstorms produce little or no rain and only contain lightning and thunder. Therefore, when you are able to hear thunder, you are within striking distance and should seek shelter right away! This means stopping all outdoor activities, such as hiking, fishing and golfing. However, even being indoors can make a person vulnerable to lightning strikes. People should avoid being near windows and doors and, more generally, any object that is capable of conducting electricity.

Lightning Safety Week is June 20-26. Participate by educating people about the dangers of lightning. With education and a little common sense, we can greatly increase public safety when lightning storms threaten.



Picture of a severe thunderstorm with dangerous lightning as it bears down on Elko, NV.

Did you know that...

Each spark of lightning can extend to be more than 5 miles long, can rise to temperatures of approximately 50,000 degrees Fahrenheit, and can contain 100 million electrical volts.

Did you know that...

The channel of lightning heats very rapidly. This rapid expansion of heated air causes the sound of thunder. Since light travels faster than sound in the atmosphere, the sound of thunder is heard after the lightning is seen. So, if you see lightning and hear thunder at the same time, that lightning is right in your neighborhood and you should take cover immediately!

Lamoille Creek by Larry Whitworth, Senior Meteorologist

Flooding is a big concern during times of Spring snowmelt, especially in narrow channels at higher elevations, which can respond rapidly. Considered one of the greatest flood threats in Elko County, Lamoille Creek is one such site that can react in this manner.

One of the “flashiest” stretches of Lamoille Creek runs from the town of Lamoille to its confluence with the Humboldt River. Normal seasonal snowmelt can usually be contained by the streambed with help from some local diversion channels. Excessive snowmelt can occur when prolonged high temperatures are experienced or when enhancement is due to a warm rain. Because of the fast reaction time to excessive snowmelt, the close proximity of the river gage to the town, compounded with accumulated debris, it is sometimes precarious to predict exactly when flooding will occur.

Organizations such as the National Division of Forestry (NDF), the National Weather Service (NWS), the United States Forest Service (USFS), the Humboldt Water Commissioner, the Elko County Manager and the Elko County Sheriff’s Office all collaborate in an effort to prevent flooding or alert the public of the potential. In preparation this year, sand bags were made available early and debris was removed from Lamoille Creek. The NWS, with help from the NDF, monitored stream levels closely. The Sheriff’s Office, County Manager and the Water Commissioner maintained a readiness level.

Through meetings of these various organizations, the initial worry this year was that snowpack was significant enough that a prolonged period of warm temperatures or rain-on-snow could lead to a flood situation in the town of Lamoille, as it did last year. As of April 30th, an event had not occurred, but the season is young. Mid-April snowfall added depth to the existing snowpack at high elevations and, with imminent warm temperatures on the horizon, the threat for flooding will linger a little longer this year.



In 2003... Picture of high flow along Lamoille Creek and associated diversion channels beginning to breach the roadway near the bridge entering the town of Lamoille.



2003 flooding at the park in Lamoille behind the meeting house.



Avenue of sandbags laid in preparation for flooding in Lamoille.

NWS Elko Internet Web Page by James Harmer, Senior Meteorologist

As was stated in an earlier article, the National Weather Service in Elko, NV web page is located at www.wrh.noaa.gov/elko. Some of the many resources you can access include:

- Current Watches and Warnings for Nevada and any location in the U.S.
- Current weather observations, radar and satellite imagery, and river levels.
- Forecasts, including fire weather, anywhere in the U.S.
- Road conditions.
- Climate data.
- Weather Safety Tips.
- Spotter Program and Storm Ready Info.

Also, if you are not a spotter and are interested in being a part of the Spotter Program, just let us know. You can either call us at (775) 778-6716 or email the Weather Service in Elko, NV at james.harmer@noaa.gov and we will get you signed up. Click on **Spotter Program** under the **Weather Safety** section on the left menu for further details.

Elko Students Tour Office by Jeff Savadel, Senior Meteorologist

The 8th grade class from Elko Middle School visited the Weather Service in Elko on Friday, March 12 for a tour of the office. Approximately 25 students were broken up into two groups for the office tour. The groups viewed a presentation by Senior Meteorologist Jeff Savadel on the responsibilities of the office and the various technologies, such as the WSR-88D radar, satellite imagery, and the Interactive Forecast Preparation System (IFPS) used by the staff to generate forecasts, warnings, and other products. They were also given a tour of the forecast operations area by Student Meteorologist Larry Smith, where they saw the Advanced Weather Interactive Processing System (AWIPS) workstations, NOAA Weather Radio equipment and the Upper Air Observing system. The highlight of the tour for the students occurred when the entire class went outside to observe the afternoon upper air balloon launch. Following the balloon launch, the tour concluded with a question-and-answer session between the students and several WFO Elko staff members. We extend our thanks to Elko Middle School for allowing our office to include them as part of our Spring outreach activities.



Student Meteorologist Larry Smith shows Elko students a freshly inflated weather balloon and explains what happens to the balloon after its release.

Community Leaders Help the NWS by Paul Eyssautier, Warning Coordination Meteorologist

The National Weather Service in Elko has worked with many community leaders over the past several years to provide Weather Safety and Safety Awareness Workshops to the community and to help improve the broadcast of the NOAA Weather Radio. We would like to take the time to publicly thank these people for their generous help:

Humboldt County Sheriff Gene Hill in Winnemucca

Russell Peacock, White Pine County Director of Emergency Services

Verl Jarvie, Chairman, Elko County Local Emergency Planning Committee

Bill Webb, Elko County Director of Emergency Services

Gary Konakis, Fire Chief Spring Creek Volunteer Fire Dept.

Lee Killeen, Lander County LEPC member

Fire Chief Jeff Knudson and Gary Corona, West Wendover Fire Dept.

Leonard Fiorenzi, Eureka County Director of Emergency Services

William B. Hall, Nye County Director of Emergency Services

Elko Amateur Radio Club

Since my arrival in Elko almost 4 years ago, these people have made my job easier because they were willing to work with the National Weather Service in providing a service that would benefit the entire community. I will be leaving Elko for greener pastures and would like to thank these individuals, and others I may not have listed, for their support and cooperation. Thank you very much.

Paul Eyssautier
Warning Coordination Meteorologist

A Big Thanks by Brandon Peloquin, Meteorologist Intern

Nearly 4 years ago, Paul Eyssautier joined the Elko Weather Service staff as Warning Coordination Meteorologist. Just as Paul took the time to thank community leaders who made his job easier, the Elko Weather staff wants to take the time to thank Paul as he made our jobs easier. On behalf of the entire staff, THANK YOU PAUL, and we wish you the best of luck as you move on to, as you called it, "greener pastures." I will also be moving on to "greener pastures," and I would like to take the time to thank the entire Elko staff for an enjoyable 16 months in Elko. Being a meteorologist at the Elko office and being the editor of this newsletter have been extremely rewarding experiences.



Warning Coordination Meteorologist Paul Eyssautier (left front) and Meteorologist Intern Brandon Peloquin (right front) participate in an Emergency Manager's Seminar ... just one of many office functions that both Paul and Brandon participated in during their stays at the Elko office.

Review: Severe Weather Terminology

Cb - Cumulonimbus cloud - characterized by strong vertical development in the form of mountains or huge towers topped at least partially by a smooth, flat anvil.

Towering Cumulus - A large cumulus cloud with great vertical development, usually with a cauliflower-like appearance, but lacking the characteristic anvil of a Cb.

Air-mass Thunderstorm - Generally, a thunderstorm not associated with a front or other type of forcing mechanism. Air mass thunderstorms typically are associated with warm, humid air in the summer months; they develop during the afternoon in response to heating and dissipate rather quickly after sunset. They generally are less likely to be severe than other types of thunderstorms, but they still are capable of producing gusty winds, small hail and brief heavy rain.

Severe Thunderstorm - A thunderstorm which produces tornadoes, hail 0.75 inches or more in diameter, or winds of 50 knots (58 mph) or more. Structural wind damage may imply the occurrence of a severe thunderstorm.

Tornado - A violently rotating column of air in contact with the ground and extending from the base of a thunderstorm.

Microburst - A small, concentrated outward burst of damaging winds near the ground affecting an area less than 4 kilometers (about 2.5 miles) across.

Dry Microburst - A downburst of cooler air from clouds with little or no precipitation reaching the ground; most common in semi-arid regions. They may or may not produce lightning. Dry microbursts may develop in an otherwise fair-weather pattern; visible signs may include a cumulus cloud or small Cb with a high base and high-level virga. At the ground, the only visible sign might be a plume of dust or a ring of blowing dust beneath a local area of virga.

Virga - Streaks or wisps of precipitation falling from a cloud but evaporating before reaching the ground. In certain cases, shafts of virga may precede a microburst.

*Severe Weather Terms taken from the National Weather Service's Comprehensive Glossary of Weather Terms For Spotters.

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